

1 they differ in two significant areas: The  
 2 emissions inventories and the interpretation of the  
 3 model result.

4 With respect to the emissions inventory.  
 5 The assessment of increment consumption necessarily  
 6 requires two emissions inventories, one for the  
 7 baseline scenario and the second for the current  
 8 scenario. Each of the two emissions inventories is  
 9 based upon two primary components, emissions  
 10 sources selected for inclusion, or the source  
 11 inventory, and emission rates assigned to those  
 12 sources, or the emissions inventory.

13 The source inventory used by EPA for the  
 14 baseline scenario is the same inventory the  
 15 Department developed for their '99 increment  
 16 compliance analysis. However, the Department  
 17 refined that source inventory before conducting the  
 18 modeling described in its April 2002 draft report.  
 19 That refinement resulted in the changes to the '99  
 20 inventory that appear to better reflect actual  
 21 increment consumption.

22 As a result, the inventory used by EPA for  
 23 its baseline scenario did not contain certain  
 24 sources that, according to the Department report,  
 25 have contributed to increment expansion. Those

1 first obtain a certification of no adverse impact,  
 2 otherwise called a Class I variance, from the  
 3 affected Federal Land Manager. Those  
 4 certifications were ultimately provided.

5 Essentially the certification of no  
 6 adverse impact is a statement by the Federal Land  
 7 Manager that, despite predicted pollutant  
 8 concentrations exceeding the applicable increment,  
 9 the Class I area would experience no adverse impact  
 10 to air quality related values as a result of the  
 11 predicted impacts. The issuance of a permit to  
 12 construct a source that has been predicted to cause  
 13 or contribute to a Class I increment violation is  
 14 provided for in the Federal Clean Air Act and its  
 15 implementing regulations where the Federal Land  
 16 Manager so certifies. The provision of those  
 17 certifications is subject to public notice and  
 18 comment. In lieu of the requirement to demonstrate  
 19 compliance with the Class I increment, the Federal  
 20 Clean Air Act instead requires the source to meet  
 21 the conditions of its permit and a less restrictive  
 22 set of PSD Class I SO<sub>2</sub> increments uniquely  
 23 associated with the provision of the variance.  
 24 According to the Department, the certifications are  
 25 permit specific and expire with the permit.

1 sources are the Mandan Refinery, the Lignite Gas  
 2 Plant, and the collection of minor oil and gas  
 3 production facilities located nearby, within 50  
 4 kilometers, of the affected Class I area  
 5 boundaries. Each of those sources is reported by  
 6 the Department to have existed prior to the  
 7 applicable baseline dates and experienced  
 8 reductions in emissions since those baseline  
 9 dates. If the Department is correct, the EPA  
 10 inventory is deficient and, when input to the  
 11 Calpuff model, would contribute to the over-  
 12 prediction of increment consumption.

13 Additionally, according to the Department,  
 14 the EPA increment-consuming inventory, or the  
 15 current scenario, include emissions from sources  
 16 for which the Federal Land Manager has provided  
 17 certification of no adverse impact. Those sources  
 18 are the Great Plains Synfuels Plant and the Little  
 19 Knife Gas Processing Plant.

20 According to information obtained from the  
 21 Department, increased emissions associated with  
 22 those sources were predicted by modeling to cause  
 23 or to contribute to increment violations within the  
 24 Class I areas. As a result, in order to obtain a  
 25 permit to construct those sources, they had to

1 Based upon the Federal Land Manager  
 2 provision of the certifications of no adverse  
 3 impact, it would be inappropriate to now propose to  
 4 count those emissions from those FLM-certified  
 5 sources as increment consuming. Indeed, if despite  
 6 the provision of the Federal Land Manager  
 7 certification the predicted impacts were still  
 8 considered increment violations, there would be no  
 9 point in the Clean Air Act providing for, and the  
 10 source obtaining the certification. The inclusion  
 11 of those sources in the increment-consuming  
 12 inventory would contribute to overpredictions of  
 13 the amount of increment consumed. Considering that  
 14 the Great Plains Gas Plant is assigned the fifth  
 15 highest increment-consuming emission rate of the 17  
 16 sources included in the EPA's current scenario, the  
 17 magnitude and frequency of overpredictions could be  
 18 significant.

19 With respect to the emissions inventory.  
 20 The emission rates assigned by EPA are different  
 21 than the corresponding emission rates assigned by  
 22 the Department for virtually every source in both  
 23 the baseline and current scenarios. The Department  
 24 reported using annual average hourly emission rates  
 25 to obtain the 3-hour and 24-hour average emission

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1 rates for the baseline inventory and certain  
2 sources for the current inventory. Where  
3 continuous emission monitor systems data were  
4 available, the Department used actual emission  
5 rates for the current scenario. EPA reported using  
6 the 90th percentile 3-hour and 24-hour average  
7 emission rates for both inventories with certain  
8 settings.

9 By way of supporting its decision to use  
10 the 90th percentile emission rates, EPA reports  
11 that emissions equal to the 90th percentile  
12 rates have actually occurred on several  
13 occasions based upon a review of the CEMS data.  
14 However, that is different than stating that all  
15 sources at one time or another emitted at their  
16 90th percentile rates simultaneously, which is what  
17 the EPA model would simulate. In the context of  
18 increment consumption, that could turn out to be a  
19 significant distinction since the impacts from  
20 those emissions depend heavily upon the relative  
21 proximity of each source to the Class I area and  
22 upon the prevailing meteorological conditions  
23 between the source and the receptors at the time of  
24 the emissions.

25 The Department accurately points out that

1 base scenario emissions. EPA extrapolated its 90th  
2 percentile emission rates for the baseline scenario  
3 from calculated annual average hourly rates using  
4 peak-to-mean ratios from the current emissions  
5 scenario. The calculation of the annual average  
6 hourly emission rate for the base scenario is  
7 somewhat subjective as it will yield different  
8 results depending upon the inputs and assumptions  
9 used. In fact, the Department and EPA do not agree  
10 on even those points. To now attempt to  
11 extrapolate the 90th percentile emission rate from  
12 disputed annual average hourly rates for the base  
13 scenario would serve only to compound the errors  
14 inherent in any calculation of those rates using  
15 available data.

16 The effect of these different approaches  
17 on the frequency and magnitude of predicted  
18 increment violations is difficult to determine  
19 because the EPA emissions inventory for the current  
20 scenario represents emissions for the two-year  
21 period '99 and 2000 while the Department EI for the  
22 current scenario represents the two-year period  
23 2000 to 2001. The Department supported the use of  
24 the 2000-2001 emissions instead of the '99-2000  
25 emissions on the basis that the CEMS data gathered

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1 there is no legal or regulatory requirement to use  
2 anything but actual emissions to assess increment  
3 compliance. EPA would likely agree depending upon  
4 how "actual" is defined in that context. In EPA's  
5 1990 Draft New Source Review Workshop Manual, EPA  
6 calls for the use of the maximum emission rate  
7 realized during the prior two-year period for each  
8 averaging period as representative of actual  
9 emissions. One could support the use of the  
10 maximum emission rate for each averaging period on  
11 the basis that those emissions actually occurred  
12 and a corresponding amount of increment was  
13 consumed as a result. However, when one applies  
14 that definition of "actual" to the numerous and  
15 varied sources in the modeling exercise conducted  
16 by the Department and EPA for North Dakota Class I  
17 increment compliance, one necessarily makes the  
18 assumption that all sources actually emitted at  
19 those rates simultaneously, which is not likely.  
20 In fact, it appears that EPA's review of the CEMS  
21 data confirmed that never occurred.

22 Additionally, absent CEMS data, the  
23 maximum emission rate for a particular averaging  
24 period is impossible to discern from available  
25 data. For example, that would be applied to the

1 prior to January 1st, 2000, is not as reliable as  
2 that gathered after that date. The Department  
3 correctly cites the availability of more accurate  
4 flow measuring methods available in 2000 as support  
5 for that conclusion.

6 Additionally, phase II of the acid rain  
7 program kicked in in January of 2000, which lowered  
8 the basis for calculating allowance allocations  
9 from 2.5 pounds per million Btu to 1.2 pounds per  
10 million Btu. As the Department correctly points  
11 out, it is likely that at least some of the  
12 affected sources took steps to reduce their  
13 emission rates at that time in order to minimize  
14 the cost of compliance. Indeed, the Department  
15 reports that emissions from those sources decreased  
16 by 25,000 tons from 1999 to 2000. The Department  
17 argues that the new rate of emissions is more  
18 representative of normal operations for the future  
19 and should be the basis for assessing increment  
20 compliance. The Department argument is persuasive  
21 and it would seem to require little effort to  
22 reconcile the two inventories using the 2000-2001  
23 data.

24 Also with respect to the emissions  
25 inventories, there appears to be some difference in

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<p>1 the two agencies' bases for calculating actual  2 annual average hourly rates for the base scenario.  3 For example, because EPA reports using the 90th  4 percentile emission rates for the base scenario  5 while the Department reports using the annual  6 average hourly rates, one would expect that the  7 base scenario the EPA states would be somewhat  8 greater than the corresponding Department's  9 emission rates. That is especially true  10 considering that EPA extrapolated the 90th  11 percentile emission rates from the annual average  12 hourly rates which the Department reported using  13 in its model. As it turns out, that is not  14 necessarily the case. For example, the  15 EPA-assigned base scenario emission rate for the  16 Milton R. Young Unit 1 is 3,972 pounds per hour  17 while the corresponding Department rate is reported  18 as 4,650 pounds per hour. It would be unusual  19 indeed for the 90th percentile emission rate to be  20 15 percent lower than the corresponding average  21 rate. The observed difference suggests that the  22 two agencies used different inputs in their  23 respective calculations, for example, average  24 sulfur content of fuels.  25 Bison did not conduct a detailed review of</p>	<p>1 to interpret model output for determining increment  2 compliance nearly 20 years ago. That method  3 prescribes that increment consumption occurs at  4 discrete points in space and time and that it can  5 be accurately simulated using computer models. For  6 example, using the EPA-prescribed method, it is  7 possible, even likely, that model results could be  8 interpreted to demonstrate the occurrence of a  9 violation of the 3-hour SO<sub>2</sub> increment at a specific  10 receptor during a specific 3-hour period, but not  11 at the same receptor during the subsequent 3-hour  12 period or at an adjacent receptor during the same  13 3-hour period.  14 Using that example, where a proposed  15 increment-consuming source can show, via modeling,  16 that its emissions would not contribute significant  17 amounts of SO<sub>2</sub> to the violated receptor during that  18 specific 3-hour period when the violation has been  19 predicted, that proposed source would not be  20 considered part of the problem and would not be  21 denied a permit based on increment violations.  22 That, despite the fact that the model predicted the  23 proposed source would contribute significantly to  24 the adjacent receptor during that same 3-hour  25 period or to that same receptor during the</p>
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<p>1 the emissions inventories, which would be necessary  2 to discern the differences in the inputs used to  3 calculate actual emissions for the base scenario.  4 In the context of this increment compliance  5 demonstration, it would seem that a consensus of  6 the emissions inventory could be easily achieved.  7 The more difficult tasks may be to reach consensus  8 on the sources to include in the base and current  9 scenarios and how to interpret the model output.  10 Considering the uncertainty in  11 establishing the 90th percentile short-term  12 emission rates for the base scenario and the fact  13 that it is extremely unlikely that all sources  14 considered would be emitting simultaneously at  15 their respective maximum rates, it would seem more  16 appropriate to use the actual annual average hourly  17 rates for the base scenario, as the Department has  18 proposed. It follows then that the actual annual  19 average hourly emission rates should also be used  20 in the current scenario since, as EPA observed in  21 its draft report, one should use the same  22 methodology to quantify emissions for both  23 scenarios.  24 With respect to the interpretation of the  25 model output. EPA established the method now used</p>	<p>1 subsequent 3-hour period. The implication of the  2 EPA-established method for interpreting model  3 output is that the model is sufficiently accurate  4 in its simulation of real world events that one can  5 rely upon its output to accurately predict changes  6 in impacts at a specific point on the ground for  7 one 3-hour period to the next or to accurately  8 predict differences in impacts between two adjacent  9 receptors, perhaps 500 meters apart, during the  10 same 3-hour period.  11 In the case at hand, the EPA approach  12 would necessitate the assumption that the Calpuff  13 model results are accurate enough to make those  14 distinctions in predicting impacts. Most would  15 agree that Calpuff model is an improvement over  16 previously available dispersion models for  17 simulating long-range transport of pollutants.  18 However, it is still a computer model dependent  19 upon the quality of its inputs.  20 Consider these facts: The sources of  21 emissions are as much as 200 kilometers away from  22 the selected receptors;  23 The meteorological data input to the  24 model, although substantial, is relatively scant  25 compared to the number of real world meteorological</p>

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<p>1 variables that influence the dispersion of 2 pollutants over that distance; 3     The amount of surface data input to the 4 model, also substantial, is still relatively scant 5 compared to the real world variations in surface 6 elevations, texture, types of cover and other 7 characteristics that ultimately influence the 8 dispersion of pollutants over that distance; 9     Finally, the emissions inventory, itself, 10 may be no more than an educated guess in the case 11 of the baseline inventory. 12     Given the relatively crude information 13 input to the model and the inherent limitations of 14 the model, itself, one cannot reasonably expect the 15 model to accurately simulate real world impacts 16 with such fine resolution. However, that is 17 exactly what the EPA-established procedure 18 promotes. 19     The approach taken by the Department in 20 interpreting the model results is somewhat 21 inconsistent with the EPA-established method. 22 Nevertheless, it would appear to be a more 23 realistic interpretation given the scarcity of 24 inputs to the model that would be necessary to 25 accurately and reliably predict concentrations at</p>	<p>1 each hour of each year. Receptor averaging simply 2 sums the predicted concentrations at those 3 receptors for each hour and divides that sum by 22 4 to obtain a Class I areawide average hourly 5 concentration to represent the impacts on the South 6 Unit, effectively creating one receptor where the 7 predicted impact is the average of all 22 8 receptors. In the end, receptor averaging creates 9 one predicted average hourly concentration to 10 represent the impacts to the South Unit for each 11 hour of the year. 12     After receptor averaging, the average 13 predicted concentrations for each hour are input to 14 the Calpuff post-processor, called Calpost, which 15 calculates the 3-hour and 24-hour and annual 16 impacts in the same manner as would otherwise have 17 been done for each of the 22 original receptors 18 under the EPA-prescribed method. Calpost then 19 produced predicted high and second-high 20 concentrations for the single receptor used to 21 represent the Class I area. That output from the 22 modeling of the base scenario establishes the 23 baseline concentration for the Class I area. The 24 Department simply added the applicable increment to 25 the predicted baseline concentration to obtain what</p>
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<p>1 one-hour temporal resolution and a four-and-a-half- 2 kilometer spatial resolution at a distance of 200 3 kilometers. 4     The Department apparently followed the 5 EPA-prescribed methods for executing the model, but 6 departed from EPA guidance and historic practice in 7 applying the model output to its assessment of 8 increment compliance. Rather than comparing the 9 predicted impacts from baseline emissions at each 10 receptor and for each averaging period to the 11 corresponding impacts from current emissions to 12 determine the potential for increment violations, 13 the Department implemented a step in the process it 14 refers to as receptor averaging. 15     After obtaining the predicted hourly 16 average air pollutant concentrations for each hour 17 of each year at each receptor, the Department then 18 averaged the predicted receptor-specific hourly 19 concentrations for each Class I area. As a result, 20 for each hour of each year, the Department 21 developed an average concentration for each Class I 22 area. For example, there were 22 receptors used to 23 represent the South Unit of the Theodore Roosevelt 24 National Park. The model predicted SO<sub>2</sub> 25 concentrations at each of those 22 receptors for</p>	<p>1 it termed the maximum allowable ambient level, or 2 MAAL. The output from the current scenario is then 3 compared to the MAAL to determine the potential for 4 increment violations. 5     Bison considers the Department approach to 6 interpreting model output more appropriate for use 7 in assessing increment consumption than its EPA 8 counterpart because the Department approach 9 implicitly acknowledges the limitations of today's 10 models. It also facilitates the tracking of 11 increment consumption for proposed new sources by 12 eliminating the potential need to search for a fit 13 by examining the impacts at each receptor for each 14 discrete averaging period over the period of 15 meteorological data, typically five years. Taken 16 another step, once the MAAL has been established, 17 it would be possible to monitor an increment 18 violation. Using the EPA-prescribed approach, it 19 would be impossible to monitor an increment 20 violation since the maximum allowable concentration 21 is never established. 22     The approach may require some 23 standardization in terms of required pre-averaging 24 and post-averaging receptor density, as well as 25 other refinements before it can be widely applied.</p>

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1 Nevertheless, for the reasons cited above, it is an  
2 improvement of the approach currently used in  
3 demonstrating increment compliance, including the  
4 approach used by EPA in its January 2002 Class I  
5 increment analysis.

6 In conclusion, based upon a review of the  
7 available information, Bison concludes that the  
8 Department has developed a more appropriate  
9 approach to assessing Class I increment compliance  
10 in North Dakota than the corresponding approach  
11 used by EPA. The Department approach is considered  
12 better due mainly to the use of the updated source  
13 inventory, the less subjective emissions inventory,  
14 and the use of receptor averaging.

15 As noted above, apparent discrepancies in  
16 the inputs and assumptions used to calculate  
17 baseline actual annual average hourly emissions  
18 must be resolved to the mutual satisfaction of both  
19 agencies, but should not be a difficult task. More  
20 difficult may be the task to reach agreement on  
21 whether to use the actual annual average hourly  
22 rates or the 90th percentile of those rates. It  
23 would seem appropriate to use the actual annual  
24 average hourly emission rates because of the  
25 subjectivity involved in using any other rate.

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1 Finally, when one considers that the PSD  
2 increment is intended solely to prevent significant  
3 deterioration of air quality from an arbitrarily  
4 selected baseline and has no health or welfare  
5 implications, it would seem appropriate to  
6 implement the most objective and repeatable  
7 monitoring system available. On that basis it  
8 seems unnecessary to contrive the 90th percentile  
9 emissions rate or to pretend that the model is so  
10 accurate and reliable as to be able to simulate  
11 actual conditions with the resolution implied by  
12 the EPA-prescribed method of monitoring increment  
13 consumption.

14 Great Northern and Bison appreciate the  
15 opportunity to provide our input to the Department  
16 on this important matter.

17 That concludes my testimony. I will be  
18 happy to take questions.

19 MR. SCHWINDT: Thank you, Mr. Southwick.  
20 Any questions, Doug?

21 MR. BAHR: Yes, I have a question. In  
22 your report you point out reasons why you don't  
23 think the FLM-certified sources should be  
24 considered. Are you aware of any legal authority  
25 for that, any cases, any rules, anything published

1 by the EPA that has said they are not to be  
2 considered?

3 MR. SOUTHWICK: No. My conclusion is  
4 reached based solely on my reading of the Clean Air  
5 Act.

6 MR. BAHR: Based upon what you fee is  
7 logical under the purposes of the Act?

8 MR. SOUTHWICK: Yes.

9 MR. BAHR: On the averaging, as I  
10 understand it, you agree with the Department's  
11 averaging. Would that not permit part of the Class  
12 I area to be completely included, but another one  
13 -- as long as that half of it or something is kept  
14 clean, if you average, maybe just a section is  
15 getting destroyed, but the rest of it is still  
16 okay, is that your understanding of the intent of  
17 the Clean Air Act?

18 MR. SOUTHWICK: I do not understand that  
19 to be the intent of the Clean Air Act.

20 MR. BAHR: Is that a possibility by  
21 averaging, by averaging instead of considering  
22 what's happening at each particular place of the  
23 Class I area?

24 MR. SOUTHWICK: I would say in a virtual  
25 world that's possible. That's hard to say in a

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1 real world. The Clean Air Act prescribed the  
2 baseline as the baseline concentration. It didn't  
3 mention emission rates. The only tool we have  
4 today to simulate the baseline concentration is to  
5 try to recreate baseline emissions. To the extent  
6 that receptor averaging may appear to allow  
7 increment violations perhaps in one part of the  
8 park where an averaging approach would not predict  
9 that, I submit to you that that can happen today  
10 under the EPA-prescribed method.

11 MR. BAHR: And why is that?

12 MR. SOUTHWICK: Because the EPA-prescribed  
13 method implies that increment consumption occurs at  
14 discrete points in space and time. The model we  
15 use, and it's the only way we have of predicting  
16 those, necessarily requires, for example, another  
17 source coming in to demonstrate that it doesn't  
18 contribute significantly or cause an increment  
19 violation during those discrete points in space and  
20 time. I submit to you that the model is not that  
21 life. And that the model -- and that approach  
22 could in fact allow a new source to come in and  
23 create in the real world an increment violation  
24 that the model never predicted simply because, take  
25 a new source, for example, you have an increment

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1 violation predicted during the first 3-hour period  
 2 of year one, but not the second 3-hour period of  
 3 year one, a new source coming in would simply have  
 4 to demonstrate that it does not contribute  
 5 significantly to the concentration predicted with  
 6 the first 3-hour period and it could consume 99  
 7 percent of the increment during the second 3-hour  
 8 period and there would be no increment violation  
 9 and the source would not be prohibited -- would not  
 10 be denied a permit on that basis.

11 MR. BAHR: Any other questions?

12 MR. SCHWINDT: Mr. Southwick, do you do  
 13 work in other states, as well?

14 MR. SOUTHWICK: Yes, sir.

15 MR. SCHWINDT: Are you familiar with how  
 16 other states have established baseline areas or  
 17 baseline concentrations in their Class I areas in  
 18 the states that may have Class I areas that you  
 19 work?

20 MR. SOUTHWICK: No.

21 MR. SCHWINDT: So you don't know whether  
 22 they have actually used monitored information or is  
 23 it all computer-simulated baseline concentrations?

24 MR. SOUTHWICK: I can't be certain, but my  
 25 understanding is that no one monitors increment

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1 compliance. Increment compliance is almost  
 2 exclusively determined through dispersion modeling.

3 MR. SCHWINDT: Increment compliance, but  
 4 I'm wondering about the baseline concentration to  
 5 begin with. Was that ever done by monitoring the  
 6 baseline?

7 MR. SOUTHWICK: I'm not aware.

8 MR. SCHWINDT: Yesterday we talked about  
 9 the problems with the bubbler data and things like  
 10 that, and I think that was widely used in the early  
 11 and late 1970s, but I was just wondering whether  
 12 there was any state that had monitored baseline  
 13 concentrations that they are using.

14 MR. SOUTHWICK: I'm not aware of any.

15 MR. SCHWINDT: Okay. Thank you. Are  
 16 there any other questions? Lyle.

17 MR. WITHAM: Lyle Witham, assistant  
 18 attorney general. Mr. Southwick, I want to follow  
 19 up on one of the hearing officer's questions, but  
 20 before I do that, I would like to begin with just  
 21 -- I'm going to quote some language from the  
 22 Alabama Power decision and ask for your  
 23 recommendations to the Department as to how they  
 24 could follow this policy as intended by Congress.

25 Congress expected -- this is from the

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1 Alabama Power decision, three different places.  
 2 Congress expected EPA and the states to develop and  
 3 utilize the most accurate and feasible modeling  
 4 techniques available and to, quote, use actual air  
 5 quality data to establish the baseline, end quote,  
 6 which is defined, quote, in terms of existing  
 7 ambient concentration levels on the minor source  
 8 baseline date. In addition, quote, Congress  
 9 intended that monitoring would impose a certain  
 10 discipline on the use of modeling techniques, end  
 11 quote, through, quote, development of sophisticated  
 12 monitoring techniques, end quote, by which modeling  
 13 techniques would be, quote, held by a continual  
 14 process of confirmation reassessment, the process  
 15 that enhances confidence in modeling as a means for  
 16 realistic projection of air quality, end quote.

17 The State of North Dakota has 20 years of  
 18 monitoring data and they have, also, 20 years of  
 19 experience with the long-range models using  
 20 allowable emissions and now exploring ways of  
 21 possibly using actual emissions. How could this  
 22 basic policy that Congress intended as quoted in  
 23 Alabama Power be implemented by the Health  
 24 Department into their program? Or how could you  
 25 use modeling and monitoring -- monitoring the act

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1 as a checks and balancing to help -- that's --  
 2 there's those statements in that case, there is  
 3 that intent by Congress, but how does a state like  
 4 us that has to deal with this problem make that  
 5 work? Any suggestions?

6 MR. SOUTHWICK: I understand your question  
 7 to be, how can the State of North Dakota implement  
 8 what Alabama Power has suggested and that is using  
 9 monitoring data to confirm model predictions?

10 MR. WITHAM: That's right. That's  
 11 basically it.

12 MR. SOUTHWICK: The best -- my suggestion  
 13 would simply be to model for predicted  
 14 concentrations at the monitor receptor, a specific  
 15 area where the monitor is located, and compare  
 16 those results to what you see on the monitor. The  
 17 challenge there is to recreate all of the real  
 18 world conditions that existed when that monitor saw  
 19 that concentration, and, frankly, that's not  
 20 possible.

21 MR. WITHAM: Okay. Let's talk about that  
 22 a little bit. Now, I've got -- up here I've got --  
 23 would you explain -- I'm an English major, too, and  
 24 I've struggled with this for a long time. I know  
 25 the hearing officers might benefit from some

1 explanation from an expert like you on some of the  
2 basic PSD concepts.

3 Would you explain what EPA has  
4 traditionally modeled? Now, up there we've got --  
5 on the top on your right we've got the total  
6 emissions basically as a simulation of that graph I  
7 showed with Mr. Fry's -- the slide I showed to Mr.  
8 Fry when I asked him some questions, showing total  
9 emissions from power plants, but that is not in  
10 fact what is modeled. Traditionally EPA does not  
11 model all SO2 emissions from major sources;  
12 correct?

13 MR. SOUTHWICK: Correct.

14 MR. WITHAM: What do they model?

15 MR. SOUTHWICK: They model the difference  
16 between -- well, actually, the first attempt would  
17 be to just identify the sources that have come into  
18 existence since the baseline date. The assumption  
19 is that there is no need to model a baseline  
20 scenario so long as you know what all the emissions  
21 are, and that works great in a perfect world.

22 MR. WITHAM: Okay.

23 MR. SOUTHWICK: Unfortunately -- let me  
24 continue for a moment -- in a real world, baseline  
25 sources can both consume increment and expand

1 is that correct? Is that an accurate --

2 MR. SOUTHWICK: Yes.

3 MR. WITHAM: And those predictions aren't  
4 the total ambient concentration at those points,  
5 but only the predicted concentrations from  
6 increment-consuming emissions; correct?

7 MR. SOUTHWICK: Correct.

8 MR. WITHAM: Now, there are in North  
9 Dakota large baseline sources, also; is that  
10 correct? Are you familiar with those?

11 MR. SOUTHWICK: Yes, there are.

12 MR. WITHAM: And are the baseline  
13 emissions from those sources greater than or less  
14 than the total SO2 emissions from the  
15 increment-consuming sources?

16 MR. SOUTHWICK: Based on that graph they  
17 appear to be greater than the increment-consuming  
18 emissions.

19 MR. WITHAM: Assuming that they are,  
20 couldn't you also model the total baseline  
21 emissions and predict what concentrations they  
22 would cause?

23 MR. SOUTHWICK: Certainly.

24 MR. WITHAM: And since those sources are  
25 located at different points than the increment-

1 increment. You can't ignore a baseline source that  
2 has had an emission reduction, and you have to  
3 include that in your modeling, and the way EPA has  
4 typically done that in the past is to -- and  
5 they've done it here in this example, they  
6 calculate what the baseline emission rate was, they  
7 then calculate what the new -- the current emission  
8 rate is and take the difference, model the  
9 difference, whether it be positive or negative.

10 They model an increment-expanding source as a  
11 negative and an increment-consuming source as a  
12 positive. The flaw in their approach here is that  
13 they have great information about what the current  
14 emission rate is and plenty of data to identify the  
15 90th percentile. What they don't have is that  
16 corresponding information for the baseline. And  
17 they simply contrived, is the only word I can come  
18 up with, a 90th percentile rate for the baseline  
19 source to get that difference put into their model.

20 MR. WITHAM: Okay. And then when they  
21 modeled those increment-consuming emissions after  
22 they made those adjustments, they come up with  
23 something like the top on the left here, which are  
24 basically predictions by the computer model of  
25 concentrations at points within the Class I area;

1 consuming sources, would they predict the high  
2 concentrations at exactly the same time as for the  
3 increment-consuming sources? Do you understand my  
4 question?

5 MR. SOUTHWICK: I'm afraid I don't.

6 MR. WITHAM: Okay. If you've modeled the  
7 baseline concentration sources, because they're  
8 located in different places than the increment-  
9 consuming sources, would those modeled emissions  
10 reach the point in the park that's being modeled  
11 for a concentration at exactly the same time?

12 MR. SOUTHWICK: Well, if the assumption is  
13 that you're modeling a source in one location and a  
14 source in another location, are their emissions  
15 going to reach the receptor at the same time, no.

16 MR. WITHAM: Okay. And so you would end  
17 up with then -- assuming that your baseline  
18 emission estimates occurred, you would end up like  
19 something at the bottom which is a lot like the top  
20 with some predicted highest concentrations? Would  
21 that -- you would end up with something exactly  
22 like you do for increment-consuming sources?

23 MR. SOUTHWICK: You would end up with  
24 predicted concentrations, certainly.

25 MR. WITHAM: Okay.



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1 MR. SOUTHWICK: But you would -- yes, you  
2 would end up with predicted concentrations.

3 MR. WITHAM: All right. Now, those --  
4 this is in arguments within the -- or discussions  
5 within the Department, itself, the staffing  
6 problem. Would the -- would those highest -- if  
7 those -- let's say -- let's take on this example up  
8 here, and it doesn't matter the number, but you  
9 identify your second highest. Now, let's take --  
10 it's probably hard to ask this question over here.  
11 This is just for illustrative purposes only. This  
12 is not based on anything. Let's say this was your  
13 second highest, okay? Then you go correspondingly  
14 to -- let's say it's on day 320 -- 320 of the year,  
15 and here's 320 from the year for baseline sources,  
16 and this shows a low concentration at that point  
17 for the baseline source, but it's also your highest  
18 concentration for increment-consuming source. Now,  
19 under EPA's methodology this would be a violation;  
20 correct?

21 MR. SOUTHWICK: Correct.

22 MR. WITHAM: But in terms of if you're  
23 looking at both baseline concentrations and  
24 increment-consuming sources, you could add -- this  
25 is a 5, this is a 5, you could add a little more

1 was low, you would actually -- on this particular  
2 day you would have a concentration of maybe in the  
3 range of 12 or 13 micrograms per cubic meter. So  
4 on this particular day you would have a violation  
5 when the ambient concentration was actually in the  
6 range of 6 or 7; on this particular day you would  
7 have no violation, but the total ambient  
8 concentration is 12 or 13?

9 MR. SOUTHWICK: That's exactly right.

10 MR. WITHAM: Is that one of the problems  
11 with what EPA is doing because they never took the  
12 total ambient concentration?

13 MR. SOUTHWICK: I don't agree with that.  
14 I think what you're comparing -- when you're  
15 modeling your baseline source and adding your  
16 increment-consuming sources, what you're ending up  
17 with is a total predicted concentration, which is  
18 not relevant to increment consumption. It is  
19 relevant to the national ambient air quality  
20 standards which are health-based and welfare-based  
21 standards.

22 MR. WITHAM: But if the baseline  
23 concentration as defined by Congress is an ambient  
24 concentration, shouldn't you be adding -- to  
25 determine whether a violation occurs, shouldn't you

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1 than 5 to this and the actual ambient concentration  
2 from both sources could be a lot less than on  
3 concentrations -- this is just theoretically -- on  
4 concentrations from increment-consuming sources,  
5 just looking at the baseline emissions; correct?  
6 Do you understand my question?

7 MR. SOUTHWICK: Let me try to repeat it  
8 and see if I do. Are you suggesting that we could  
9 add the baseline emissions to the increment-  
10 consuming emissions and end up with a lower  
11 concentration than modeling the increment-consuming  
12 emissions by themselves?

13 MR. WITHAM: Well, if you add up these two  
14 together, you'd have some approximation of the  
15 total ambient concentration; correct?

16 MR. SOUTHWICK: Correct.

17 MR. WITHAM: So on this particular day if  
18 you added them together, your total ambient  
19 concentration would be in the range of 7 micrograms  
20 per cubic meter --

21 MR. SOUTHWICK: Agreed.

22 MR. WITHAM: -- in that range? Okay.  
23 This illustration shows if you picked this as your  
24 second high and this was a day where the  
25 concentration from the increment-consuming sources

1 be adding the increment on top of that baseline  
2 concentration to see what your total concentration  
3 is?

4 MR. SOUTHWICK: Yes.

5 MR. WITHAM: So does that change your  
6 opinion?

7 MR. SOUTHWICK: Well, if the -- no. In  
8 fact, what you've illustrated there is exactly  
9 correct, that by modeling the increment alone, you  
10 would predict an increment violation when in fact  
11 the baseline sources were emitting hardly anything.

12 MR. WITHAM: Well, they would be emitting,  
13 but they wouldn't be affecting that source at that  
14 same point in time.

15 MR. SOUTHWICK: They wouldn't be  
16 considered in determining whether there was an  
17 increment violation. What you would do -- if I  
18 understand this question correctly, what -- EPA's  
19 approach would be to just model the increment-  
20 consuming sources. You're then suggesting that  
21 increment has to be over and above the baseline  
22 concentration. Am I correct in that?

23 MR. WITHAM: I'm reading the law when I  
24 say that, so -- and that's what the law says.

25 MR. SOUTHWICK: I confess I'm confused by



1 the question.

2 MR. WITHAM: Is this a policy issue that  
3 you think the Department should consider in its  
4 approach?

5 MR. SOUTHWICK: That policy issue? Could  
6 you repeat?

7 MR. WITHAM: On how to deal with this  
8 stacking problem. If you don't have an opinion,  
9 you can submit written comments at a later time.  
10 You would have ten days. Why don't you think about  
11 it.

12 MR. SOUTHWICK: All right. Thank you.

13 MR. WITHAM: I've got another to follow up  
14 on a couple of Doug's questions.

15 MR. SCHWINDT: Lyle, how many more  
16 questions do you have? I'm just wondering about  
17 giving our reporter a break here.

18 MR. WITHAM: Oh, it will probably take  
19 five minutes. I don't know. Why don't we take a  
20 break. That's fine. It's up to you.

21 MR. SCHWINDT: Why don't we do that.  
22 Let's take a short recess here. Why don't we come  
23 back about five after. Thank you.

24 (Recess taken at 10:52 a.m. to 11:06 a.m.)

25 MR. SCHWINDT: If we could get started

1 violation.

2 MR. WITHAM: Thank you. That is.

3 MR. SOUTHWICK: My assessment of that is  
4 if you use the same emissions inventory, you use  
5 the same meteorological data, you use the same  
6 surface data, and you use the same model, it's not  
7 going to matter. You should end up with the same  
8 result.

9 MR. WITHAM: Thank you. I have just one  
10 other set of questions with regard to one of the  
11 hearing officer's questions. This is again from  
12 Mr. O'Clair's testimony. This both of the right  
13 here illustrates SO2 emissions from oil and gas  
14 sources in tons per year, showing in about 1982  
15 there were about 35,000 tons, currently from the  
16 SO2 sources in North Dakota and for the last decade  
17 or so the range has been lower, in the last couple  
18 years about 5,000 tons. Would you explain for the  
19 hearing officer basically the difference in terms  
20 of long-range modeling a source like the oil and  
21 gas emissions, sources -- minor sources that are  
22 close to the park, how they would affect receptors  
23 in the park as compared to modeling larger point  
24 sources like the coal-fired plants in central North  
25 Dakota where emissions have to travel a long

1 again, please. Okay. If we could get started.

2 Lyle, you had some questions you were posing.

3 MR. WITHAM: Yeah. Mr. Southwick, I asked  
4 you some questions about this stacking problem and  
5 you said you wanted to think about it. Would you  
6 in your own words describe what -- if you think  
7 this stacking problem is an issue and how it --  
8 what policy the Department should consider using  
9 with regard to that issue? Explain it in your own  
10 words.

11 MR. SOUTHWICK: Well, if I understand  
12 where we're headed with this, the issue is whether  
13 we are bound and whether it is appropriate to use  
14 what I would call the EPA shortcut approach to  
15 determine the increment consumption, and that is  
16 simply modeling the increment-consuming and  
17 expanding emissions and ignoring everything else,  
18 or taking the Department's suggested approach, and  
19 that is to model baseline emissions, predict what  
20 essentially the Clean Air Act cited, and that is  
21 the baseline concentration, then model all of the  
22 emissions from both baseline and increment-  
23 consuming sources and find the difference in each  
24 discrete averaging period, and those differences  
25 would then be used to determine whether there's a

1 distance before they reach those same receptors in  
2 terms of the concentration varied over the whole  
3 park from that point source? Do you understand the  
4 question? You might want to put the question in  
5 your own words so he can understand it and then  
6 give your answer.

7 MR. SOUTHWICK: If I understand the  
8 question, it is, is there likely to be more  
9 difference in concentrations attributable to  
10 sources far away from the park, are there going to  
11 likely be more differences in those resulting  
12 impacts from one side of the park to the far side  
13 versus the near side compared to a source that is  
14 located nearby the park, would the source nearby  
15 the park tend to have more of a variation between  
16 predicted impacts at the near park value versus the  
17 far park value.

18 MR. WITHAM: That's correct.

19 MR. SOUTHWICK: The distant sources, the  
20 200-kilometer distant sources, those emissions are  
21 going to have ample opportunity to disperse. The  
22 difference in concentration 200 kilometers and 250  
23 kilometers is likely to be fairly small compared to  
24 the difference in impact from a source nearby,  
25 which have not had -- whose emissions have not had

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1 an opportunity to disperse significantly. They are  
2 likely to have a greater difference in predicted  
3 impacts between the park boundary closest to them  
4 and the park boundary farthest away because they  
5 have not had that opportunity to disperse. In  
6 fact, they will be dispersing as they go over the  
7 park boundary -- or over the park.

8 MR. SCHWINDT: So as was pointed out by  
9 one of the presenters yesterday, the oil and gas  
10 sources that would be close by could have a  
11 significant impact both on increment consumption  
12 and on baseline concentrations, as well, depending  
13 on their proximity to the park?

14 MR. SOUTHWICK: Certainly.

15 MR. SCHWINDT: And it's more likely that  
16 you would have larger impacts close by that well  
17 versus the opposite side of the Class I area as you  
18 just stated?

19 MR. SOUTHWICK: Generally that's true,  
20 yes.

21 MR. SCHWINDT: Okay.

22 MR. WITHAM: I have nothing further.

23 MR. SCHWINDT: Any other questions?

24 Okay. Thank you, Mr. Southwick.

25 MR. SCHWINDT: Next, we'll call on Basin

1 hope I won't lapse too much into the jargon. And  
2 if we can make it a little bit -- I think it's  
3 important to try to get to understand and get to  
4 the root of it.

5 I would like to begin with to address what  
6 the hearing officer inquired about at the last  
7 witness, which was what other states are doing, if  
8 we know. Your question specifically dealt with  
9 whether they modeled baseline emissions and what  
10 they do with these areas, whether they actually  
11 measure.

12 In my experience, I've worked on about 50  
13 different PSD permits in 35 different states and I  
14 work with these baseline areas rather regularly.  
15 For instance, in Montana right now there's a  
16 proposal to divide the state up into 10-kilometer  
17 grids, each of which would be a separate baseline  
18 area. The State of Nevada has just done that.  
19 They have about 265 areas. They, like most states,  
20 require a year of baseline data before you do your  
21 permits. The very first thing I would tell any  
22 client who wants to establish a source is to get  
23 out there and do the year of baseline monitoring.

24 We encountered the very contention that  
25 EPA is making here with respect to the irrelevance

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1 Electric for their presentation.

2 MR. CONNERY: If there's anybody who can't  
3 hear me, let me know. I'm not very good with these  
4 speaker things. I'm here representing Basin  
5 Electric and Dakota Gasification Company, and I  
6 have with me today the people who actually put  
7 together the information and data which we hope  
8 will be useful to the Department and to EPA.  
9 Deborah Levchak, who is their environmental  
10 counsel; Jim Miller, who is their environmental --  
11 manager of environmental services; Olmstead Adams,  
12 who has helped with all of our presentations; and  
13 Larry Vollmert from my office, Holland & Hart in  
14 Denver; Keith Ganjer, who is the environmental  
15 manager for Dakota Gasification Company; and then I  
16 also have Curt Melland, who is the plant manager  
17 for the Leland Olds Station. In addition to these  
18 people who have contributed to this presentation, I  
19 have with me Bob Hammer of Tetra Tech, Kirk Winges  
20 of Tetra Tech, and Bob Paine of ENSR  
21 International.

22 My name is Bob Connery. I'm with Holland  
23 & Hart in Denver. I'm an attorney and I have spent  
24 much, much, much too much time thinking and talking  
25 about prevention of significant deterioration. I

1 of monitored data that you can only look at the  
2 models, that you can only look at the increment,  
3 you don't need to look at the baseline. They made  
4 that contention and they actually put it in their  
5 1978 regulations, which were appealed in this case  
6 you heard so much about, the Alabama Power case,  
7 and they established one uniform baseline date that  
8 said that each state had to have one area so that  
9 the baseline was triggered and increment was  
10 consumed and growth was limited within the entire  
11 state based on a source located anywhere in the  
12 state. And they said it had to be based on  
13 modeling. Well, the Court threw that out. It set  
14 it aside. You've already heard quotes from your  
15 own counsel. And let me just read you a couple  
16 things. I don't like to read from courts  
17 especially because I know it's dry as dishwater.

18 But they said Congress focused and fully  
19 understood the consequences of choosing how to  
20 treat the baseline. And it said that the Senate  
21 explicitly rejected the uniform date approach and  
22 that the approach that EPA had taken simply blinks  
23 reality. They said that the Senate knew and wanted  
24 actual baseline air quality data to establish the  
25 baseline.

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1 Now, I know you have to use modeling for  
2 sources. You have to adjust that with modeling.  
3 But to hold it to earth, to hold this to reality,  
4 as Lyle said, is an essential part of the process  
5 because it holds us to the total impacts. And I  
6 submit to you with respect that it is a complete  
7 misunderstanding of the purpose of these statutes  
8 to disregard the baseline concentration as adjusted  
9 when necessary with modeling and to consider, in  
10 addition to that, the impacts that a proposed  
11 source will add.

12 In the case of Class I areas in  
13 particular, I think what I hope to show you in the  
14 way of the history of the program and the law, that  
15 simply was not anticipated and would be  
16 antithetical to the purpose of the program because  
17 the total impacts were important. That's what  
18 counts, particularly in Class I areas.

19 Can I get some water?

20 MR. SCHWINDT: Sure.

21 MR. CONNERY: This is the dry, dull part.  
22 We're actually going to talk about the law. The  
23 law is driving this. And the things that you've  
24 heard over the past couple days -- past day and a  
25 half have dealt with what are very significant

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1 changes in the way in which this program is being  
2 viewed and administered by EPA.

3 The program -- I think there's surprising  
4 agreement, if you will, among all the parties we've  
5 heard this morning that the essential issue here is  
6 whether or not the State has done a good job in  
7 protecting against significant deterioration and  
8 protecting the applicable increment. Has the State  
9 done that job or has it not? Is it so bad that EPA  
10 has to come in and school the State and say what  
11 you have done is not adequate and you have to  
12 revise your plan or we are going to revise your  
13 plan? That is the issue here and this is the  
14 program we're dealing with.

15 It has been suggested that the State's  
16 plan is inadequate. I personally find that --  
17 personally and professionally find that suggestion  
18 extraordinary. The State of North Dakota was the  
19 very first state to use long-range transport  
20 modeling and to model all of its sources to  
21 determine whether the increment was being protected  
22 in Class I areas, and it started doing that back in  
23 the early '80s.

24 Now, I live in Denver, and I'm not  
25 suggesting Denver is in any way comparable to North

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1 Dakota, but we've added 50,000 people a year to the  
2 Denver metropolitan area and we've added tens of  
3 minor sources and we've added 1200 megawatts, we're  
4 adding right now. Do you think we've ever done  
5 what you're doing? Rocky Mountain National Park is  
6 90 miles. It's closer than Theodore Roosevelt  
7 National Park is to these sources. Do you think  
8 the Health Department in Denver has ever done  
9 that? Do you think anybody's suggested it? Do you  
10 think they're telling them the plan is inadequate?  
11 Do you think they're telling any, San Francisco or  
12 Los Angeles or New York or any of the sources that  
13 affect the Adirondacks or many other places? This  
14 state has done more than any other state, and it's  
15 done it based on a baseline statewide that the  
16 courts have held was invalid. This state adopted  
17 its plan in 1976 and has been controlling  
18 deterioration and has been doing more than any  
19 other state has ever done to protect Class I area  
20 air quality. And the question is going to be  
21 whether or not that job is adequate. However you  
22 compare it, it's done it more, it's done it better,  
23 it's done it longer than anyone else has, it's done  
24 its best.

25 What I want to present in the way of law

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1 has to do with this program, the rules that are  
2 written for this program and the way it's been  
3 conducted for the past -- since it was adopted in  
4 the mid '70s. It is a new source review program.  
5 Primarily day in, day out, what we all do, what we  
6 all know about it, what's written in the draft  
7 manuals, what's written in the regulations, they  
8 all deal with preconstruction review. You heard  
9 reference to the Draft Workshop Manual yesterday.  
10 Well, if you look at the title of that it says,  
11 Draft New Source Review Manual, because that's what  
12 it's about. It talks about actual sources and how  
13 you take those into account when you're permitting  
14 a new source. Sure, it does. And the options I'm  
15 going to be talking about often have to do with  
16 that and how you're going to do it in this  
17 exercise. But the point is that that is the only  
18 context that has been addressed so far.

19 The context that you're now being asked to  
20 address this in is a completely different one, one  
21 that's never been done by anybody else anywhere  
22 before. No one has had to correct an increment  
23 exceedence much less one that has been approved by  
24 EPA. I'm going to go over briefly how this  
25 happened, how the State has administered this

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1 program in North Carolina -- North Dakota.  
 2 This is a conceptual slide. What it shows  
 3 -- what it shows is the baseline area here. What  
 4 it shows is the baseline concentration which  
 5 generally is measured before a new source is  
 6 permitted. In the State of North Dakota, in  
 7 looking at the Class I areas, we've often heard  
 8 about the increment of 5 micrograms per cubic  
 9 meter. The first four sources that were permitted  
 10 after this program came into effect, because this  
 11 program doesn't apply to sources that were either  
 12 under construction or constructed before January 6, 1975,  
 13 those sources aren't covered by the program,  
 14 they're baseline sources. There's discretion in  
 15 the State to deal with their increases and  
 16 decreases, using the modification context.  
 17 But in any case, four sources I understand  
 18 were permitted. This comes -- Martin Schock can  
 19 correct me if I get this wrong. The four sources  
 20 that were permitted during the period of time that  
 21 used up the Class I increment. The last two of  
 22 those, Antelope Valley Stations 1 and 2, were  
 23 modeled using the state-of-the-art models at the  
 24 time to predict the impact on Class I areas, the  
 25 first time I know that that was done anywhere. And

1 responsibility is up to the state because this is a  
 2 growth management program. This is not a health  
 3 program. That's what Mr. Notar told you  
 4 yesterday. This is a growth standard, is kind of  
 5 the way you think about it. It's not anything to  
 6 do with health or welfare.

7 Those sources all apply and all got  
 8 determinations from the Federal Land Manager in  
 9 1982, as Mr. O'Clair told you about, that they  
 10 didn't adversely affect air quality related values  
 11 and the State issued permits for all of those  
 12 sources and for subsequent sources in 19 -- up to  
 13 1993.

14 Now, each of those findings contain a  
 15 determination that what is called the alternative  
 16 increment or alternate increment was not exceeded.  
 17 That's because when you exceed the increment and  
 18 have to make a determination of air quality related  
 19 values, you have to show that you will not exceed  
 20 this increment, the alternative increment. It's  
 21 taken for granted, it's known from the beginning,  
 22 that you will exceed this increment. That's in the  
 23 statute. I'm going to get to that language without  
 24 a great deal of detail in a minute. But that is  
 25 the legal issue that is driving all of this.

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1 it showed that there would be an exceedence of  
 2 increment from these two stations. The way the  
 3 Health Department dealt with that was to impose  
 4 additional emission limitations so they would stay  
 5 within the Class I increment.  
 6 Then in 1982 and 1981, six additional  
 7 sources were proposed in this state. Those -- the  
 8 modeling for each of those sources showed  
 9 exceedence of the Class I increment. That brought  
 10 into play what are called the variance provisions  
 11 or what were styled the waiver provisions, and  
 12 those provisions -- I'm going to get to chapter and  
 13 verse on them in a minute, but what they say is  
 14 that in order to be permitted, you have to show  
 15 that air quality related values in Class I areas  
 16 will not be adversely affected. You have to apply  
 17 to the Federal Land Manager for determination to  
 18 that effect. He has to look at all of those air  
 19 quality impacts and has to determine whether or not  
 20 they're adversely affected. If he does and  
 21 certifies to the State, then the State can issue  
 22 the permit. In fact, the State can issue the  
 23 permit if it disagrees with that determination.  
 24 It's a state determination. The guidelines say  
 25 that as clear as a bell, the ultimate

1 Through the '80s, through the '90s, no one  
 2 at EPA ever took the position that this increment  
 3 was not the applicable increment. No one ever took  
 4 the position that offsets were required for any of  
 5 these sources. No one ever said that you had to  
 6 come within this limit, that it was absolute even  
 7 if you were granted a permit that said it's okay to  
 8 exceed it and that you met the alternative  
 9 increment.

10 Now, what we're being asked to do today is  
 11 a completely different exercise than permitting.  
 12 In the permitting exercise every one of those  
 13 permits and every one of those impacts were modeled  
 14 almost without exception -- I can think of one  
 15 Martin mentioned -- at allowable emissions, at the  
 16 maximum emissions. The baseline was determined  
 17 based on allowable emissions for those sources.  
 18 For instance, Leland Olds' emissions were  
 19 determined on the basis of allowable to be in the  
 20 baseline and not to consume increment. That's been  
 21 determined, as I said, on at least three or four --  
 22 four occasions that I know of.

23 So the question now is whether we're going  
 24 to change the rules on this, whether there's a good  
 25 enough reason to do that. And that's this

1 exercise. That's called, this is protection of the  
2 increments.

3 Where did it come from? It came from the  
4 Court's decision in the Alabama Power case and it's  
5 implemented by a regulation. Everybody thought  
6 this program only applied to major stationary  
7 sources, industry. The idea that it would apply to  
8 your car and mine and our space heaters and to area  
9 sources and to minor sources and that the State  
10 somehow had to factor all of that into the equation  
11 is one that had not occurred to anybody. It  
12 occurred to an environmental group. They brought  
13 this suit and the Court said, yes, you really do  
14 have to protect actual air quality from all of  
15 those sources in the increment. And guess what?  
16 North Dakota gets to take the first crack at it.

17 That was what they said 20 years ago, more  
18 than 20 years ago. And the way in which it's been  
19 implemented is this sole regulation. This is all  
20 the regulations say about this kind of proceeding.  
21 It says, if the state or the administrator  
22 determines that a plan is substantially inadequate  
23 to prevent significant deterioration or that an  
24 applicable increment -- it doesn't say Class I; it  
25 says applicable -- is being violated, then the plan

1 in effect it has certainly done the opposite of not  
2 including these.

3 I'm going to show you two sections of the  
4 statute. This is the one that I've already  
5 summarized that says, where the owner demonstrates  
6 to the satisfaction of the Federal Land Manager,  
7 and he certifies, that emissions have no adverse  
8 impact on air quality related values,  
9 notwithstanding the fact that the change in air  
10 quality resulting from the emissions will cause or  
11 contribute to exceedance of the maximum allowable  
12 increment for Class I areas, the State may issue a  
13 permit.

14 Now, it doesn't say that if the State  
15 requires an offset or a reduction, it may issue the  
16 permit. It says the State may issue the permit.  
17 The language is clear. It doesn't take a policy  
18 change to read that language and see what it says.  
19 This language enables the issuance of permits by  
20 the State and enabled virtually all the permits  
21 that were issued in the '80s and '90s and may  
22 certainly have a role in any additional permits  
23 that are issued.

24 The next section basically says, if you're  
25 one of those sources, a source issued a permit

1 shall be revised to correct the inadequacy. Now,  
2 that's what we're here today to do, is to think  
3 about and address the plan.

4 Now, these are the bad part I mentioned I  
5 was going to put up. This has to do with the  
6 statute. EPA in the letter that they wrote to the  
7 State in February quoted this section as the law on  
8 which they base the requirement that the State  
9 could not exceed the Class I increment. This  
10 simply says that each applicable implementation  
11 plan shall contain measures assuring that the  
12 maximum allowable increases over baseline shall not  
13 be exceeded.

14 Now that's where EPA ended the quote.  
15 Now, the rest of it, just take a look at this  
16 obscure reference, if you will, 165(d)(2)(C)(iv).  
17 EPA contends that this language does not  
18 acknowledge or take into account what are called  
19 variances or waivers, that this is absolute, you  
20 have to meet the Class I increment, and when  
21 Congress passed this, it did not consider waivers  
22 or variances. Well, then the very next sentence,  
23 when I get to the language of this, watch closely,  
24 because that's the variance section. I think  
25 Congress knew very well what it was doing and that

1 pursuant to that last slide that I just showed you,  
2 then you have to meet these increments. Those are  
3 the alternative increments.

4 Now, why did Congress create those if it  
5 really meant that you have to meet the Class I  
6 increment? Why is this in here? Did it say this  
7 only applies temporarily until you get your permit  
8 and then you come back and we'll slap you with the  
9 Class I areas -- the Class I increment? It didn't  
10 say that. How could that make sense in the scheme  
11 of things? Yet that is exactly what EPA contends  
12 at least in the letter from the region and in Mr.  
13 Long's testimony yesterday.

14 The State is adhering, I believe, to the  
15 language of the statute and to what the Clean Air  
16 Act requires. I do not believe that is  
17 controversial. It is not something that I believe  
18 would -- the courts would even consider upholding.

19 In describing this scheme you heard  
20 yesterday testimony to the effect that the Class I  
21 increment had been set at some scientifically  
22 determined level to protect things. I was involved  
23 in this legislation when it passed, believe it or  
24 not, back in 1977 and in the setting of these  
25 levels, and the process was, I think, what you call

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1 sausage being made. It was not exactly a  
2 scientific process, let me say.

3 The level for the Class I increment for  
4 SO<sub>2</sub> was set at -- the Class I increments in general  
5 were set at arbitrary percentages of the health and  
6 welfare standards which were much, much higher, in  
7 this case about 2 percent. It was set at a level  
8 that is below the detection limit of instruments,  
9 so it's kind of hard to talk about scientific  
10 effects of something you can't detect. Just think  
11 about how you do a study to determine that.

12 What they did was they said let's do a  
13 screening level. The fundamental thing for Class I  
14 areas is to basically protect them as best you can;  
15 any effect on them gets tested. And the way it  
16 gets tested is with air quality related values.  
17 That demonstration has to be made to the Federal  
18 Land Manager. And that demonstration I contend is  
19 the basic one, the fundamental one. It is the  
20 determined, not the Class I increment, but the air  
21 quality related values analysis.

22 What's the proof of that? Well, take a  
23 look at the section that precedes these three, the  
24 two that I've just put up. This says that even  
25 though you meet the Class I increment, if the

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1 Federal Land Manager demonstrates to the  
2 satisfaction of the State -- notice they don't talk  
3 about the EPA region there, they talk about the  
4 State -- that the emissions from the facility will  
5 have an adverse effect on air quality related  
6 values, then the permit can be denied even if the  
7 Class I increment is not exceeded.

8 So I believe that the air quality related  
9 value determination is very important and it's  
10 fundamental to protection of Class I areas. The  
11 fact that we've been told that the Class I  
12 increment, itself, which is an arbitrary number, a  
13 screening number, is fundamental, I do not think is  
14 correct.

15 The second thing I would like to treat has  
16 to do with the basis on which the State regulates  
17 major stationary sources. Everyone so far has  
18 talked about actual emissions as being the basis  
19 for doing this. The State proposes to use actual  
20 emissions as the basis for controlling sources now  
21 and in the future. And that, too, would be a great  
22 departure from what has been done. As I mentioned,  
23 every source virtually has been permitted based on  
24 its allowable emissions, and the -- whoops, I lost  
25 it here.

1 The actual emissions have a funny  
2 definition. When we talk about "actual," everybody  
3 assumes that we're talking about the first of these  
4 two paragraphs. There actually is a third one.  
5 The definition of "actual emissions" has two  
6 alternative -- actually three alternative, one of  
7 which is not relevant here, two alternative  
8 definitions. You heard from Scott earlier today  
9 that he would prefer allowable. Many people  
10 would. That's a legitimate position, a legitimate  
11 choice.

12 What this regulation says is "actual"  
13 means one of these three things. The first one is  
14 in general. It means the average rate in tons a  
15 year at which the unit actually emitted for a  
16 two-year period which precedes the particular date  
17 and is representative of normal source operation.  
18 Well, that is one definition. That's one choice  
19 the State can make.

20 It also can choose to do what it's done  
21 for the last 20 years for sources, and that is to  
22 determine their emissions based on -- you can  
23 presume that source-specific allowable emissions  
24 for the source are equivalent to the actual  
25 emissions. So it has that choice. And I simply,

1 without taking too much of your time, am going to  
2 tell you that I think that's an extremely important  
3 policy choice, and it has a lot to do with whether  
4 or not new sources can and will be built in this  
5 state. Allowable emissions, you need -- a new  
6 source coming in here needs to be able to count on  
7 the capacity it is built for, the capacity that may  
8 reasonably be expected over the life of the  
9 facility.

10 If General Motors wants to build a plant  
11 that makes a thousand cars a year, but it's going  
12 to build up to that demand over 10 years or 15  
13 years, the fact that the market is only built up to  
14 250 units is not, I believe, a basis for cutting it  
15 back to that capacity. I think it has to be able  
16 to rely and it's economics 101, if you will, but it  
17 has to be able to rely on that. It has to be able  
18 to say, okay, we've got a permit to do a thousand  
19 cars, and you can't turn around after issuing that  
20 permit and two years of data, or even if it's  
21 representative of five years of data, and say, no,  
22 you can only produce 250 cars. That's what EPA  
23 says and that's what we say. That's the choice  
24 we've made here.

25 As I said, the actual emissions scheme has

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1 only been applied in preconstruction review and it  
2 applies to sources that don't get permits. It  
3 applies to minor and area sources for the most  
4 part. That's what it was intended for because you  
5 don't have permits for those sources. You have to  
6 estimate them and you estimate them based on  
7 actual.

8 So I think the State has that choice, and  
9 whether or not it inappropriately consumes  
10 increment is also an extremely important issue, one  
11 raised by your counsel. I think what's happened in  
12 North Dakota, what I showed you, is not an  
13 inappropriate consumption of increment. It is a  
14 perfectly appropriate consumption of increment and  
15 perfectly appropriate determinations of air quality  
16 related values, and the permitting scheme can  
17 continue on that footing soundly. I think it is a  
18 more than defensible scheme.

19 The question was also raised about who is  
20 in charge of these determinations, the State or  
21 EPA. Well, that was dealt with by the Court in the  
22 Alabama Power case. EPA contended that it could  
23 basically dictate to the states how they went about  
24 this, whether they chose source-specific allowable  
25 or whether they chose two-year historical or

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1 whether they chose potential to emit for sources  
2 that had begun normal operation, and the Court  
3 again overruled EPA's position. It said that EPA  
4 was without authority to dictate to the states  
5 their policy for management of consumption of the  
6 increments.

7 And EPA then said, well, how about issuing  
8 guidelines, and they said in oral argument they  
9 would be very reasonable about doing that. And  
10 they still haven't done it, of course, but the  
11 Court said that's fine. That's an appropriate  
12 step. But this is not to say that the agency may  
13 prescribe the manner in which states will manage  
14 their allowed internal growth. In the allocation  
15 of responsibilities made by Congress, maximum  
16 limitations have been set. These must be observed  
17 by the states, but assuming such compliance,  
18 growth-management decisions were left by Congress  
19 for resolution by the states.

20 I submit to you that growth decisions are  
21 exactly what Mr. Harms was talking about, the  
22 questions of reasonable growth and economic  
23 improvement, as well as environmental improvement,  
24 and the weight of those factors was clearly left to  
25 the states. The choices you make in modeling, as

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1 long as they are reasonable, I happen to believe  
2 that they will be upheld. In fact, as long as they  
3 are not arbitrary and capricious -- so unreasonable  
4 to be arbitrary and capricious, I believe they will  
5 be upheld.

6 The last thing I would like to address in  
7 beginning has to do with what you were told about  
8 EPA modeling. Mr. Long said yesterday that when  
9 EPA does a model, the courts uphold it. It's his  
10 understanding that they're always upheld. He is  
11 right that EPA has often been upheld in doing  
12 modeling. But that is not the case where a state  
13 has disagreed with EPA.

14 And for your counsel, I simply cite the  
15 case of Ohio versus United States Environmental  
16 Protection Agency, where the State of Ohio  
17 contended that EPA had not paid attention to the  
18 monitored emissions and ambient air quality from  
19 the area impacted by the source and that it was  
20 arbitrary or capricious for them not to have done  
21 so, and that in the absence of that data, they  
22 overruled EPA's decision because the litmus test,  
23 the ultimate proof, reality, common sense is what's  
24 actually happening out there, not what the black  
25 box tells you.

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1 I'm going to desist and apologize to you  
2 for talking about the law. And what I would like  
3 to do at this point is to proceed with my  
4 witnesses, and I don't know whether you want to  
5 take a break now or whether you want to do it  
6 later.

7 MR. SCHWINDT: Does anybody have any  
8 particular questions for Mr. Connery at this point  
9 in time?

10 MR. WITHAM: Yeah. Mr. Connery, Lyle  
11 Witham. I have -- could you go back to the slide  
12 which quotes the 166, the two? There you go.

13 MR. CONNERY: There we go.

14 MR. WITHAM: Basically using the  
15 definition on the bottom with allowable emissions  
16 as the Department has traditionally modeled, the  
17 State has shown increment violations. Recently the  
18 Department in the draft model in the docket for  
19 comment by the public we used actual emissions.  
20 And that, using an actual emissions approach, shows  
21 no violations in the areas. In the '80 regulations  
22 there's this language, and what my question is, I'm  
23 asking you to comment on how you think it applies  
24 to that particular definition -- those two  
25 particular options of the State and the particular



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1 definition in the rules. EPA believes -- I'm  
2 quoting from the preamble to the '80 rules. EPA  
3 believes that in calculating actual emissions,  
4 emissions allowed under federally enforceable  
5 source-specific requirements should be presumed to  
6 represent actual emission levels. Now, that would  
7 be on number 3; correct?

8 MR. CONNERY: Yes.

9 MR. WITHAM: Okay. Then the preamble goes  
10 on to say, The presumption that federally  
11 enforceable source-specific requirements correctly  
12 reflect actual operating conditions should be  
13 rejected by EPA or a state if reliable evidence is  
14 available which shows that actual emissions differ  
15 from the level established in the SIP or the  
16 permit.

17 Would you comment on the approach taken by  
18 the Department as this preamble or cookbook applies  
19 to that?

20 MR. CONNERY: The Department -- to answer  
21 the last part of your question first, the  
22 Department's position would reflect, as I  
23 understand it, exactly what EPA is, in my terms,  
24 dictating in that preamble provision. That  
25 preamble provision was written in 1980 before

1 the states can do that. That conflicts with the --  
2 if you take an absolute hard reading of what you  
3 just quoted me, it would never allow that. I don't  
4 think it was intended to allow that. I think it's  
5 a matter of state discretion whether or not you  
6 follow that as an absolute dictum.

7 MR. WITHAM: I have one follow-up  
8 question. Now, as you said in your testimony or  
9 your presentation, this is the first time there's  
10 ever really been an attempt by EPA to enforce a  
11 reduction in sources by a violation of the  
12 increment, and you've used the example of comparing  
13 Rocky Mountain National Park being 90 miles from  
14 Denver and the 1200-megawatt facilities that have  
15 been recently built in that area, et cetera. Would  
16 it make some sense in terms of policy for this  
17 state to -- when looking at actually whether the  
18 increment is violated to look at actual emissions  
19 to determine that, whereas to -- in terms of policy  
20 for permitting, et cetera, to look at the allowable  
21 emissions? Would you comment on that? And would  
22 it be possible -- let me just give you an example.  
23 With allowable that would be like determining how  
24 fast a car can go and there's a danger it could go  
25 at that level, but whether you give them a speeding

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1 anybody had done anything with preconstruction  
2 review or trying to protect the increment. And it  
3 was a guess at what was going to happen and how it  
4 should be done. It's not binding law. And in fact  
5 if EPA were to tell the State it had to do that, it  
6 would be an example in my mind of exactly what the  
7 Court was talking about, dictating to the State  
8 what it must do. The State has the option of doing  
9 that. That's what the law says. That preamble  
10 doesn't pretend to spell out a system that is --  
11 that would foreclose the State from using allowable  
12 in those determinations.

13 It also pertains to the example I was  
14 talking about. If GM wants to come in here and put  
15 in a plant that will manufacture a thousand cars or  
16 a pipeline -- take the Alaska Pipeline that took  
17 more than ten years to get to two million barrels  
18 of production, you don't have to use -- you don't  
19 have to make that presumption. If you did, you  
20 would never allow that source to reach its  
21 capacity.

22 The other provisions of the preamble  
23 clearly anticipate situations where the State may  
24 permit a source to go up to its capacity without  
25 consuming increment, a baseline source. They say

1 ticket or not, you actually yourself have to drive  
2 it on the road. Would you comment on that?  
3 MR. CONNERY: Yeah. That is one of the  
4 toughest questions, one of those open issues. This  
5 is where I think it makes sense for the State --  
6 and this is the first state to make a good-faith  
7 effort to develop a scheme that would handle this.  
8 It does need to wrestle with that issue and come up  
9 with a way of how to do a review of these sources.

10 If I can temporize for a minute in trying  
11 to answer your question. The reason why you came  
12 up with these two alternative schemes, like all  
13 good problems, it started in Texas. It -- no, that  
14 is not what you thought I was talking about. The  
15 Republicans have taken enough heat here today.

16 What happened was down in the Gulf Coast  
17 you had a bunch of sources that as a result of the  
18 Arab oil embargo had permitted much higher sulfur  
19 emissions due to the possible need for fuel  
20 switching, so their actual emissions were not  
21 consuming increment, but their hypothetical  
22 emissions were if you looked at the potential to  
23 emit or the allowable that they got if they  
24 switched to that fuel. So you couldn't permit any  
25 sources in Texas or the Gulf Coast region,